



IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re Application of
Carl E. Cupit

Serial No.: 10/045,946

Filed: 01/15/2002

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Atty. File: CUPIT 001

Art Unit 1764

Examiner: Alex Wachtel

For: APPARATUS AND METHOD FOR DETERMINING THE LEVEL IN A COKE
DRUM

DECLARATION UNDER 37 CFR § 1.132

Comes now declarant Carl E. Cupit who declares as follows:

1. He is over 18 years of age and competent to make this declaration.
2. He is the inventor of the subject patent application.
3. He has a B.S. degree in chemical engineering (1971) from Mississippi State University.
4. He has over 34 years of operating, technical support and engineering design for almost all petroleum refining process units which include fluid catalytic cracking, hydrotreating, hydrocracking, crude distillation and delayed coking. He has extensive operating experience on two older vintage delayed coking process units and detailed technical support for those delayed cokers. He has served as the lead process engineer in the design, commissioning and start-up of a state-of-the-art 80,000 barrels per day delayed coking unit and a revamp of a delayed coker to process up to 100,000 barrels per day of feed stock.
5. He has reviewed U.S. patent 4,176,052 (Bruce et al).
6. The Bruce reference discloses only point detectors which are inserted through the wall of a coke drum at a precise elevation on a coke drum particularly at a level of 27 feet. See column 8 lines 29-34 This level detector indicates only that the level in the drum has reached the height of the detector with no indication of the level below or above.
7. Several point detectors of Bruce may be placed along the length of the drum. See column 9, lines 11-17. However, the level is indicated as it passes an individual detector. Point detectors cannot be mounted end to end. There is no indication of what the level is between the detector. Without the disclosure of applicant's invention there is not enough information given to mount the detectors to achieve a continuous and accurate measurement of the rising foam layer in the coke drum. At most it would

EXHIBIT A

enable installation of these devices to impute or, in the words of the reference, predict, a level of coke and not a continuous and accurate foam level measurement.

8. Bruce et al does not discuss any calibration methodology for the level detection disclosed.

9. In particular the point detectors of Bruce cannot be used to calculate a level based upon a percentage of the detector since there can be no percentage of a point.

10. One linear detector the entire length of the coke drum would not work as accurately for reasons recited at page 8 lines 7-17. That is, the changing density of the material along the height (or length) of the drum gives a false reading. Therefore several shorter detection tubes are used in my invention, each of which can be recalibrated according the lower tube reading, to account for the density of the material adjacent that particular tube. This cannot be done by Bruce et al because they use point detectors.

11. It is the use of multiple short linear detectors stacked end to end (or nearly so) which has never been used before that has solved the problem.

12. He has provided instructions for installing, calibrating and using his level detection system to a foreign operator (Brazil) which consisted essentially of excerpts from the application. The level system was accordingly designed, installed and commissioned per that description.

I further declare that all statements made herein of my own knowledge are true and that all statements made on information and belief are believed to be true; and further that these statements were made with the knowledge that willful false statements and the like so made are punishable by fine or imprisonment, or both, under Section 1001 of Title 18 of the United States Code and that such willful false statements may jeopardize the validity of the application or any patent issued thereon.

Further declarant saith not.


Carl E. Cupit

UNITED STATES PATENT & TRADEMARK OFFICE

EXHIBIT B

I further declare that all statements made herein of my own knowledge are true and that all statements made on information and belief are believed to be true; and further that these statements were made with the knowledge that willful false statements and the like so made are punishable by fine or imprisonment, or both, under Section 1001 of Title 18 of the United States Code and that such willful false statements may jeopardize the validity of the application or any patent issued thereon.

Further declarant saith not.

John Wayne Cummings

A handwritten signature in cursive script, appearing to read "John Wayne Cummings".